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Indiana Michigan Power
Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106
AEP.com

April 20, 2007

AEP:NRC:7331
10 CFR 50.90

Docket No.: 50-316

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-P1-17
Washington, DC 20555-0001

**Donald C. Cook Nuclear Plant Unit 2
Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure
Request for Additional Information (TAC No. MD3161)**

- References:
1. Letter from J. N. Jensen, Indiana Michigan Power Company (I&M), to Nuclear Regulatory Commission (NRC) Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2, Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure," AEP:NRC:6331-02, dated September 15, 2006 (ML062690500).
 2. Electronic Transmission from P. S. Tam, NRC, to M. K. Scarpello, R. G. Vasey, and S. D. Simpson, I&M, "D.C. Cook: Additional Draft RAI re. Proposed Amendment (TAC MD3161)," dated January 11, 2007 (ML070110441).

In Reference 1, Indiana Michigan Power Company (I&M) submitted a license amendment request to revise the allowable value of the reactor trip on low turbine oil pressure function to greater than or equal to (\geq) 750 pounds per square inch gauge (psig) from its current value of ≥ 57 psig because of a design change that replaces the present turbine control system with a control system that operates at a higher pressure. Reference 2 transmitted the Nuclear Regulatory Commission's requests for additional information (RAIs) regarding the license amendment request. The attachment to this letter provides I&M's response to the RAIs.

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There are no new commitments made in this letter. Should you have any questions, please contact Ms. Susan D. Simpson, Regulatory Affairs Manager, at (269) 466-2428.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jensen', with a long horizontal flourish extending to the right.

Joseph N. Jensen
Site Vice President

RV/rdw

Attachment: Donald C. Cook Nuclear Plant Unit 2, License Amendment Request to Increase Reactor Trip on Low Turbine Control Oil Pressure Allowable Value, Request for Additional Information

c: J. L. Caldwell, NRC Region III
K. D. Curry, Ft. Wayne AEP, w/o attachment
J. T. King, MPSC
MDEQ - WHMD/RPMWS
NRC Resident Inspector
P. S. Tam, NRC Washington, DC

AFFIRMATION

I, Joseph N. Jensen, being duly sworn, state that I am Site Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

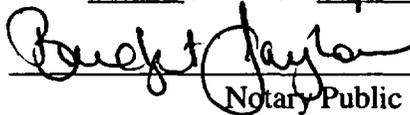
Indiana Michigan Power Company



Joseph N. Jensen
Site Vice President

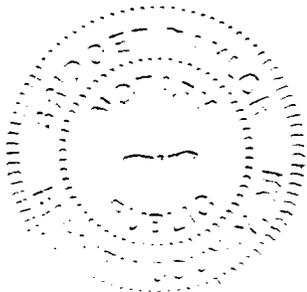
SWORN TO AND SUBSCRIBED BEFORE ME

THIS 20th DAY OF April, 2007



Notary Public

My Commission Expires 6/10/2007



Attachment to AEP:NRC:7331

Donald C. Cook Nuclear Plant Unit 2
License Amendment Request to Increase Reactor Trip
on Low Turbine Control Oil Pressure Allowable Value
Request for Additional Information

In Reference 1, Indiana Michigan Power Company (I&M) submitted a license amendment request to revise the allowable value of the reactor trip on low turbine oil pressure function to greater than or equal to (\geq) 750 pounds per square inch gauge (psig) from its current value of ≥ 57 psig because of a design change that replaces the present turbine control system with a control system that operates at a higher pressure. The turbine control system is a non-safety-related system, and the reactor trip on turbine trip is not credited in any safety analyses. Reference 2 transmitted the Nuclear Regulatory Commission's (NRC) requests for additional information regarding the license amendment request. The responses to the RAIs are provided below.

NRC Request 1

“Setpoint Calculation Methodology: Provide documentation (including sample calculations) of the methodology used for establishing the limiting setpoint (or NSP [nominal setpoint]) and the limiting acceptable values for the as-found and as-left setpoints as measured in periodic surveillance testing as described below. Indicate the related analytical limits and other limiting design values (and the sources of these values) for the setpoint.”

I&M Response

The present Electro Hydraulic Control (EHC) system with a nominal operating pressure of 114 psig is being replaced with a new high pressure EHC system with a nominal operating pressure of 1600 psig. The operation of the turbine is wholly dependent on maintaining proper EHC system pressure. The Turbine Trip on Low Fluid Oil Pressure function is not being changed. The purpose of this function is to provide an anticipatory reactor trip that minimizes the reactor pressure/temperature transient for a load rejection in excess of the capability of the steam dump system.

As the safety analyses do not credit the operation of this function, nor is there an associated analytical limit, the Low Fluid Oil Pressure setpoint is not a “limiting setpoint” and is not used to protect a design or license bases limiting condition. The Low Fluid Oil Pressure setpoint represents the turbine tripped/not tripped physical condition.

The Low Fluid Oil Pressure setpoint must, therefore, provide an un-ambiguous, non-spurious indication of the turbine trip status. A ≥ 800 psig setpoint value has been chosen based on the nominal system value (1600 psig) and the value at which the main feedpump turbine stop valve would begin to close (approximately 575-600 psig). While

the setpoint must indicate a turbine trip condition, the chosen setpoint must also prevent spurious trips that could result in challenges to the safety systems.

Since the Low Fluid Oil Pressure setpoint represents a nominal value, there is no associated methodology for establishing the limiting setpoint or the associated limiting Technical Specification (TS) Allowable Value. The chosen TS Allowable Value (≥ 750 psig) represents a nominal value that ensures the operation of this function. The chosen TS Allowable Value includes consideration of the minimum required EHC pressure, the expected calibration tolerance and calibration frequency of the pressure switches, and the expected time-based (drift) pressure switch setpoint changes. The chosen Allowable Value meets these criteria.

NRC Request 2

“This setpoint has been determined to be not SL [safety limit]-related by the licensee. Describe the measures to be taken to ensure that the associated instrument channel is capable of performing its specified safety functions in accordance with applicable design requirements and associated analyses. Include in your discussion information on the controls you employ to ensure that the as-left trip setting after completion of periodic surveillance is consistent with your setpoint methodology. Also, discuss the plant corrective action processes (including plant procedures) for restoring channels to operable status when channels are determined to be "inoperable" or "operable but degraded." If the controls are located in a document other than the TS (e.g., plant test procedure), describe how it is ensured that the control will be implemented.”

I&M Response

The Turbine Trip on Low Fluid Oil Pressure is initiated by three pressure switches. These switches are identified in the Donald C. Cook Nuclear Plant's (CNP's) "Critical Parameter List" (CPL). Instructions for the administration, processing, and control of critical parameters is provided in CNP's "Control of Critical Parameters" procedure. This procedure includes identification of the calibration requirements, administrative controls and direction for the evaluation of damaged or out-of-tolerance critical parameter instruments, identification of procedural impacts on control of critical parameters, and identification of calculation impacts on control of critical parameters. For the purpose of this procedure, out-of-tolerance is defined as "exceeding the band established around a desired value. Within the band an instrument's performance is considered acceptable." For job orders covering critical parameters (as specified by the CPL), a condition report is required if the parameter is found out-of-tolerance or the component is found in a damaged condition. An as-found condition that exceeds the calibration tolerance of any of the pressure switches would result in the initiation of a condition report in accordance with CNP's "Action Request Initiation" procedure. Engineering personnel would then evaluate the effect an out-of-tolerance process

instrument has on system operability, the Maintenance Rule Program, and surveillances in accordance with CNP's "Condition Evaluation, Action and Closure" procedure and CNP's "Instrument Uncertainty Procedure Review" engineering guide.

As an example, CNP's Unit 1 procedure titled, "Main Turbine Auto Stop Control Oil Pressure Switch Channel Calibration" contains the current Unit 1 setpoint of 800 psig. The acceptable setpoint range is 800 psig plus or minus 4 psig for the currently installed Unit 1 pressure switch. If the as-found setpoint value is found to be outside of this range during the calibration, the procedure requires confirming that an action request has been initiated. Following the initiation of an action request, an application-specific "Out-of-Tolerance" evaluation is performed. The results of the "Out-of-Tolerance" evaluation may include changes to the acceptance criteria, changes to the switch design or calibration method (including the setpoint value), or the replacement of poorly-performing components.

NRC Request 3

"Discuss any interface between the reactor trip on low turbine oil pressure and programmable logic controller used for turbine control. If there are interfaces between the two, provide justification for the acceptability of these interfaces."

I&M Response

The Triconex TS3000 system controls the operation of the main feedpump turbines and the main turbine, both of which are located in the turbine building. The software associated with this system does not interact with the reactor trip instrumentation. The hydraulic system, which provides motive force for the main feedpump turbine and main turbine valve actuators and trip blocks, contains three pressure switches that provide inputs to the reactor protection system. The circuitry associated with the pressure switches and the reactor protection system is independent of the control system.

References

1. Letter from J. N. Jensen, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2, Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure," AEP:NRC:6331-02, dated September 15, 2006 (ML062690500).
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